ACCELERATION CLAMP ASSIST

ABSTRACT OF THE DISCLOSURE

Forces are minimized in an object supported relative to a surface by providing a first, preferably static force sufficient to retain the object is position when at rest, preferably through a clamping arrangement having a first actuator, measuring or predicting an acceleration and applying a second, preferably dynamic force corresponding to the acceleration. The first and second forces are preferably arranged to be additive or reinforcing but the arrangement can be made fail-safe at the expense of increased power consumption by arranging the first force in accordance with the maximum anticipated acceleration and counteracting the first force with the second force for lesser or zero accelerations. The second force is preferably provided by a clamp of arbitrary configuration which can be moved into and out of engagement with the object. By minimizing forces applied to the object in such a manner, damage such as creep and propagation of crystal lattice dislocations over time can largely be prevented.